

CLAIMS

What is claimed is:

1. An active layer comprising at least one compound having a formula selected from Formula I, Formula II, and Formula III:

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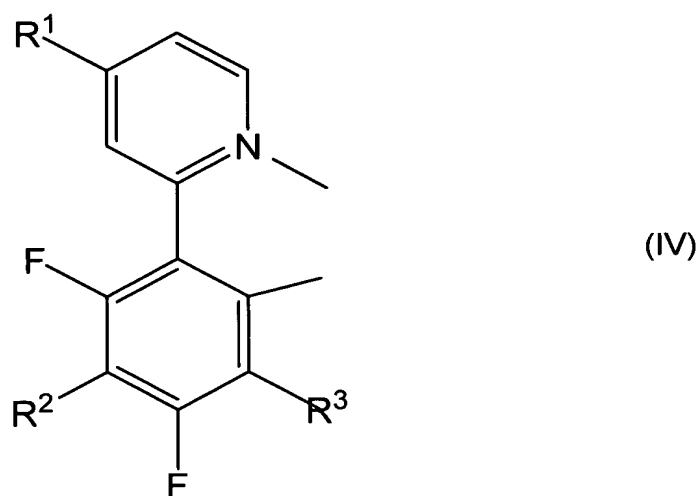


where:

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in Formulae I, II, and III:

L<sup>1</sup> has Formula IV:



wherein:

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$\text{R}^1 = \text{H}, \text{R}^4, \text{OR}^4, \text{N}(\text{R}^4)_2$

$\text{R}^2 = \text{H}, \text{C}_n\text{F}_{2n+1}, \text{C}_n\text{F}_{2n+1}\text{SO}_2, \text{COOR}^4, \text{CN}$

$\text{R}^3 = \text{H}, \text{C}_n\text{F}_{2n+1}, \text{C}_n\text{F}_{2n+1}\text{SO}_2, \text{COOR}^4, \text{CN},$

$\text{R}^4$  is the same or different at each occurrence and is H, alkyl, aryl, or adjacent  $\text{R}^4$  groups can join together to form a 5- or 6-membered ring, and

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$n$  is an integer from 1 through 20;

in Formula II:

$\text{L}^2$  is a monoanionic bidentate ligand;

in Formula III:

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$\text{L}^3$  is a monoanionic monodentate ligand; and

$\text{L}^4$  is a nonionic monodentate ligand.

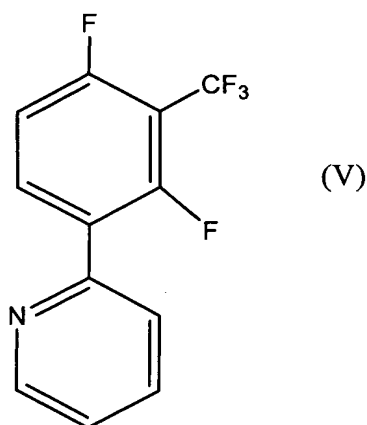
2. The active layer of Claim 1, wherein  $R^{12}$  and  $R^{13}$  are independently selected from H,  $CF_3$ ,  $C_2F_5$ ,  $n-C_3F_7$ ,  $i-C_3F_7$ ,  $C_4F_9$ ,  $CF_3SO_2$ ,  $COOR^{14}$  and CN.

3. The active layer of Claim 1, wherein the compound has Formula I and  $L^2$  is selected from a  $\beta$ -enolate, a phosphino alkoxide, and a ligand coordinated through a carbon atom which is part of an aromatic group.

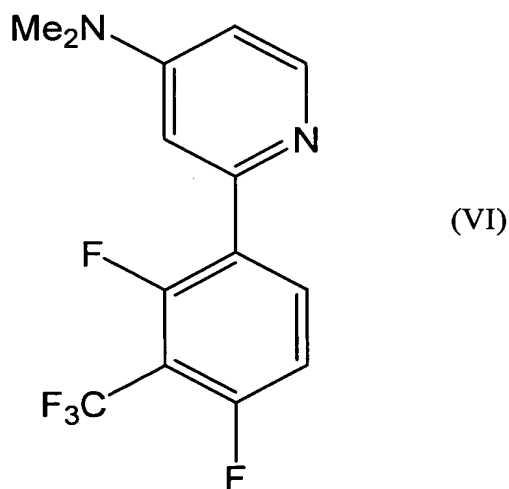
4. The active layer of Claim 1, wherein the compound has Formula II and  $L^3$  is a hydride.

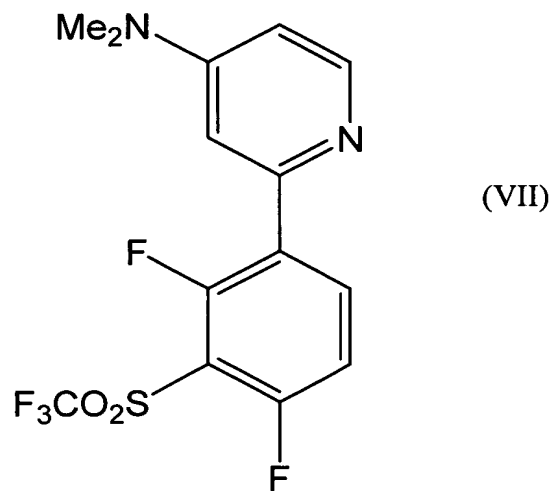
5. The active layer of Claim 1, wherein  $L^1$  is selected from ligand 1-a through 1-y as shown in Table 5.

6. The active layer of Claim 1, wherein  $L^1$  is selected from Formula V, Formula VI, Formula VII, Formula VIII, and Formula IX:

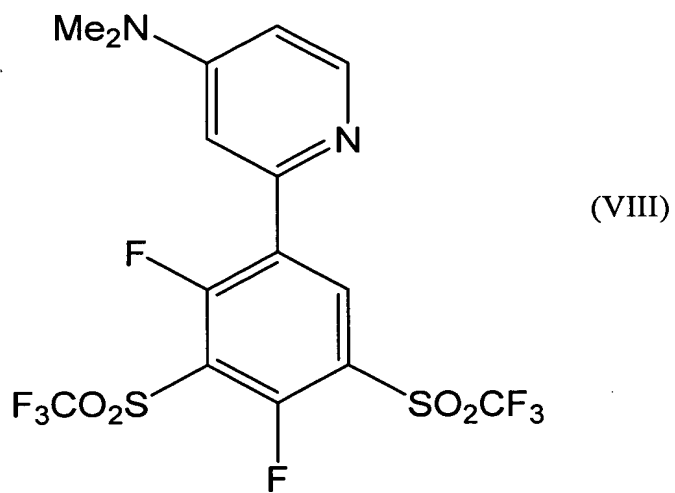


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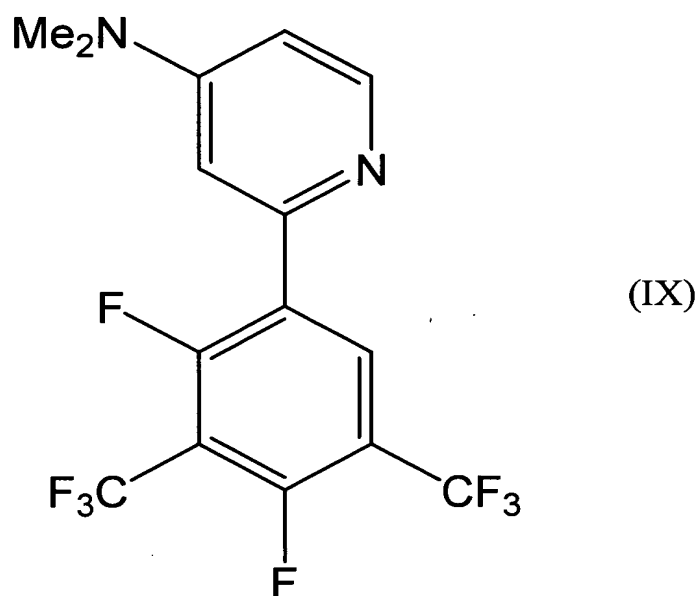


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5            7. An organic electronic device comprising at least one active layer of Claim 1.

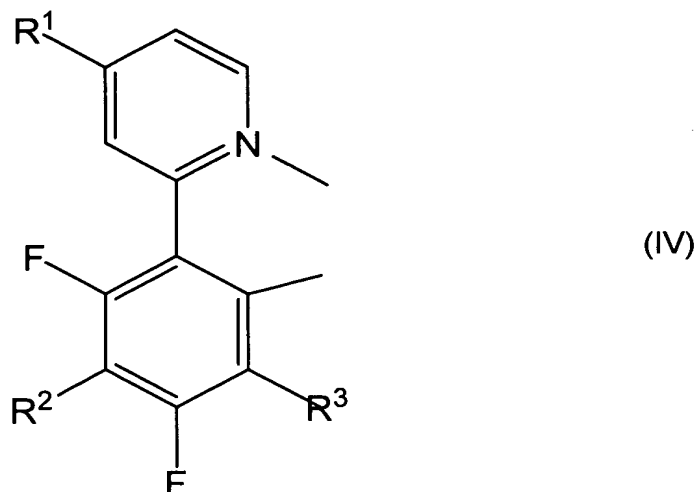
8. A compound having a formula selected from Formula I, Formula II, and Formula III:

10	$\text{Pt}(\text{L}^1)_2$	(I)
	$\text{PtL}^1\text{L}^2$	(II)
	$\text{Pt L}^1\text{L}^3\text{L}^4$	(III)

where:

in Formulae I, II, and III:

15             $\text{L}^1$  has Formula IV:



wherein:

$R^1 = H, R^4, OR^4, N(R^4)_2$

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$R^2 = H, C_nF_{2n+1}, C_nF_{2n+1}SO_2, COOR^4, CN$

$R^3 = H, C_nF_{2n+1}, C_nF_{2n+1}SO_2, COOR^4, CN,$

$R^4$  is the same or different at each occurrence and is H, alkyl, aryl, or adjacent  $R^4$  groups can join together to form a 5- or 6-membered ring, and

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$n$  is an integer from 1 through 20;

in Formula II:

$L^2$  is a monoanionic bidentate ligand;

in Formula III:

$L^3$  is a monoanionic monodentate ligand; and

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$L^4$  is a nonionic monodentate ligand.

9. The compound of Claim 8, wherein  $L^1$  is selected from ligands 1-a through 1-y, as shown in Table 1.

10. A compound of Claim 8, wherein  $R^2$  and  $R^3$  are independently selected from H,  $CF_3$ ,  $C_2C_5$ ,  $n-C_3C_7$ ,  $i-C_3F_7$ ,  $C_4C_9$ ,  $CF_3SO_2$ ,  $COOR^{14}$  and CN.

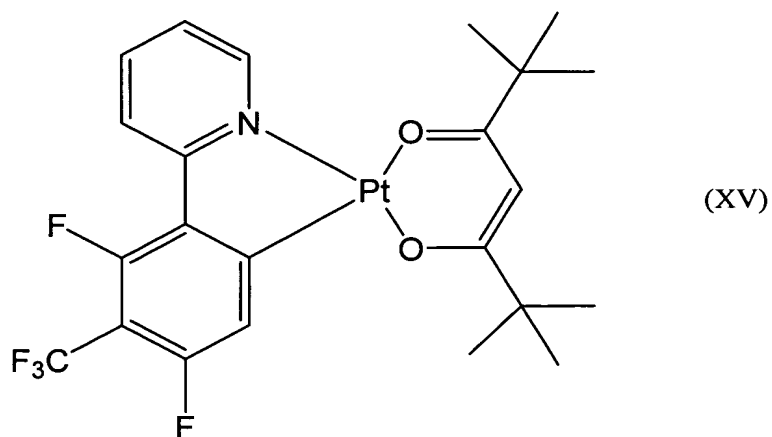
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11. A compound of Claim 8, wherein the compound has Formula II and  $L^2$  is selected from a  $\beta$ -enolate, a phosphino alkoxide, and a ligand coordinated through a carbon atom which is part of an aromatic group.

12. A compound of Claim 8, wherein the compound has Formula III and  $L^3$  is a hydride.

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13. A compound having Formula Formula XV:



14. An organic electronic device comprising a layer that comprises  
5 the compound of Claim 8.

15. An organic electronic device comprising a layer that comprises  
the compound of Claim 9.

16. An organic electronic device comprising a layer that comprises  
the compound of Claim 10.

10 17. An organic electronic device comprising a layer that comprises  
the compound of Claim 11.

18. An organic electronic device comprising a layer that comprises  
the compound of Claim 12.

15 19. An organic electronic device comprising a layer that comprises  
the compound of Claim 13.

20. An active layer of claim 1 further comprising a diluent.

21. An active layer of claim 20 wherein the diluent further comprises  
a material selected from a polymer, a small molecule, and a mixture  
thereof.

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